

Breaking Codes Breaking Barriers

The WACs of the Signal Security Agency
World War II

US Army Intelligence and Security Command



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World War II



History Office
Office of the Chief of Staff
US Army Intelligence and Security Command
Fort Belvoir, Virginia

*Dedicated to the WACs of the
US Army Signal Security Agency
in gratitude for their selfless service
and devotion to duty and country.*

PREFACE

The entry of the United States into the Second World War led to unprecedented conscription of most able-bodied men. In the face of acute wartime labor shortages, women were needed in the defense industries, the civil service, and even the Armed Forces. Virtually all Americans were 100 percent behind the war effort, but when President Franklin Roosevelt signed the bill establishing the Women's Army Auxiliary Corps (WAAC) on May 14, 1942, he did so amid controversy. America desperately needed more persons in uniform, but that need collided with the strongly held view that women did not belong in the military.

Actually, women have had roles *with* the military services, if not *in* the services since our country was founded. The WAAC simply formalized that tradition. Initially, clerical-type jobs were opened to women, but manpower shortages soon required that women be allowed to do more than serve in such positions as telephone operators, typists, and clerks. With the reorganization of the WAAC into the Women's Army Corps, WACs began to put their civilian skills—such as mathematics, communications, and linguistics—to work for the Army. The US Army Signal Security Agency sought women having experience in these areas to fill positions in its highly secret cryptologic work.

The Americans and British intercepted and unscrambled secret military and diplomatic messages that their enemies transmitted by radio. Some of the greatest triumphs of the war came as a result of these broken codes and ciphers. With the recent declassification of official records, the story of the secret war of codes and codebreakers has become well known, but most research focuses on the work

itself, rather than on those who made the effort possible. This publication gives voice to some of the women who were a part of the cryptologic successes that fed the Allies the information they needed to thwart the enemy's plans and win decisive battles in Europe and the Pacific. WACs assigned to the Signal Security Agency joined a unique group of highly trained individuals, both civilian and military, who served at the Agency's headquarters and fixed field sites.

This publication was written by Mrs. Karen Kovach of the US Army Intelligence and Security Command (INSCOM) History Office and is based on INSCOM's historical records holdings. However, the heart of this story is the recollections shared by WAC members of the Second Signal Service Battalion. Some married after the war and are quoted under their married names, but when known, their maiden names are given.

Mr. James L. Gilbert, Command Historian, provided overall guidance to the project, and Dr. John P. Finnegan, Staff Historian, furnished invaluable background on signals intelligence in World War II. Mr. Robert J. Bills, Staff Photographer, reproduced all photographs, most of which came from the files of the National Archives and Records Administration (NARA) and the INSCOM History Office. Credit for the design and format of this publication belongs to Ms. Janice Sterling, Office of Typography and Design, US Government Printing Office. The time and effort of Mrs. Charlotte Raub of HQ, INSCOM, in reviewing and editing the manuscript are greatly appreciated. A special thanks to the former WACs who provided personal photos.

CHRONOLOGY

28 May 1941

Congresswoman Edith Nourse Rogers introduced a bill to form a women's auxiliary army corps.

7 December 1941

The Japanese bombed Pearl Harbor.

May 1942

The WAAC (Women's Army Auxiliary Corps) bill was passed. However, it did not authorize equal pay, entitlements for dependents, or military rank. Mrs. Oveta Culp Hobby was appointed as the First Director of the Women's Army Auxiliary Corps.

June 1942

The Army acquired Arlington Hall and established an intercept station at Vint Hill Farms, Warrenton, VA. Vint Hill Farms became the East Coast monitoring station.

August 1942

Two Rock Ranch Station at Petaluma, CA was established as the West Coast monitoring station.

July 1943

The Signal Intelligence Service was redesignated the Signal Security Agency (SSA) with headquarters at Arlington Hall Station, Arlington, VA.

3 July 1943

The Women's Army Corps bill was signed into law.

August 1943

Six WACs reported to duty at Arlington Hall Station. Two more arrived on 2 October 1943. By the end of December 1943, 225 WACs were on duty at AHS.

9 October 1943

The first enlisted WACs (radio intercept operators) arrived at Vint Hill Farms Station from Camp Crowder, MO and were assigned to the Second Signal Service Battalion, becoming the SSA's first WAC company.

29 October 1943

The WAC detachment at Two Rock Ranch Station—an officer and a cadre of 9 enlisted women—were joined by 91 enlisted women from Camp Crowder, including 4 for duty as cooks and 87 as radio operators.

6 June 1944

D-DAY. Allied forces landed at Normandy, France.

8 May 1945

Victory in Europe. V-E Day was proclaimed on 8 May after the enemy forces surrendered on 7 May 1945.

2 September 1945

Victory in Japan. V-J Day was proclaimed on 2 September to celebrate Japan's acceptance of unconditional surrender terms on 14 August 1945.

15 September 1945

The SSA was reorganized under the G-2, War Department as the Army Security Agency (predecessor to the US Army Intelligence and Security Command).

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CHAPTER ONE

SETTING THE STAGE

SIGNALS INTELLIGENCE

The story of the Signal Security Agency WACs is part of a larger story—that of signals intelligence. Throughout history, intercepting an adversary's communications has been one of the most valuable means of learning his intentions. The advent of wireless communications initiated a new dimension to what generally has become known as signals intelligence (SIGINT). Basically, SIGINT involves intercepting the enemy's messages and breaking his code and cipher systems.

During World War II, SIGINT provided America with an incomparable source of military intelligence. Intercepted messages forwarded from worldwide monitoring sites to Arlington Hall Station, the Signal Security Agency headquarters in Virginia, often revealed enemy plans, which enabled pre-emptive strikes on enemy forces. Timely intercepts provided information vital to Allied victories in actions ranging from battles in the Pacific to operations in North Africa and Western Europe. This successful exploitation of the enemy's communications was made possible by the Army's pre-war achievements in code and cipher solution.

BACKGROUND

By the mid-1930's, most industrial nations had some type of electromechanical enciphering system. The most sophisticated were multiple-rotor machines that produced complex ciphers. William F. Friedman, a brilliant cryptanalyst and pioneer in cryptology, used mathematical inductive reasoning to reconstruct the machines and crack their ciphers. Appointed to head the Army's Signals Intelligence Service (SIS), Friedman hand-picked individuals with backgrounds in math and foreign languages to train in the meticulous, painstaking work of cryptology.

Frank Rowlett was the first hired as a junior cryptanalyst. He admitted, "I had no idea what a cryptanalyst did... I thought I'd be doing some kind of statistical work on crypts!" Within a month, Abraham Sinkov and Solomon Kullback also reported to work. They were soon joined by a young man named John Hurt, who, although lacking an extensive math background, was unusually fluent in Japanese. Later, several women were counted among the team, including, Wilma Zimmerman, Genevieve Grotjan, Mary Jo Dunning (a statistician), and Abraham Sinkov's wife Deliah.



GEORGE MARSHALL FOUNDATION

William F. Friedman, Chief of the Signals Intelligence Service, sits at a cipher machine. Comparable machines were used widely in World War II.

Working out of the Munitions Building in Washington, DC, Friedman and his small staff made truly outstanding contributions to cryptology. By the end of 1938 they were reading every Japanese diplomatic cryptosystem then in use, until the Japanese introduced a new machine, which SIS code-named PURPLE.

The messages enciphered by PURPLE proved very complex. For nearly 18 months the cryptanalysts studied message traffic, straining to find the breakthrough that would allow PURPLE to be read. Then, one Friday afternoon, Genevieve Grotjan, a young, studious junior cryptanalyst, interrupted Frank Rowlett and her coworkers. Rowlett described what occurred next: “She takes us to her desk in the next room, lays out worksheets, points to one example, then another, then a third. She stands back, with eyes tranced behind her rimless glasses... I jump up and down—that’s it!”



Brain power marshaled in the service of secrecy: William F. Friedman (center) and his staff. Left to right: Herrick F. Bearce; Solomon Kullback; Captain Harold G. Miller; Louise Newkirk; Abraham Sinkov; Lieutenant L.T. Jones (US Coast Guard); and Frank B. Rowlett. Missing is John Hurt, who was ill when the picture was taken.



The Munitions Building—a temporary building built during World War I at 19th and Constitution Avenue, Washington, DC was the nerve center of SIGINT operations prior to 1942.

Genevieve had found the piece of the puzzle that would ultimately lead to the code's solution. The penetration of the Japanese cipher machine—and the resultant intelligence, codenamed MAGIC—would prove to be the key to the success of the signals intelligence effort in the Pacific.

By 1939, the SIS consisted of only five Signal Corps officers and 15 civilians, but it rapidly expanded as the war in Europe escalated. By December 7, 1941, the Washington headquarters staff had grown to 181 persons.

ARLINGTON HALL STATION

Following the Japanese attack on Pearl Harbor the scope of SIGINT operations quickly exceeded the confines of the Munitions Building. The SIS needed a secure location with room to accommodate their expanding mission. The search led across the Potomac to the Virginia suburbs and the secluded premises of a private girl's school,



In June 1942 the Army took possession of Arlington Hall.



Arlington Hall had been a prestigious school for girls before it became the Headquarters of the Signal Security Agency and the Second Signal Service Battalion.

Arlington Hall Junior College. Arlington Hall was ideally located for the Army's purpose: convenient to Washington and its new intercept site at nearby Vint Hill Farms, yet isolated enough to provide the security so vital to a SIGINT mission. On June 10, 1942, the Army took possession of the college under the War Powers Act. By August the former school grounds had been enclosed by an alarmed double chain-link fence and a badge-identification system instituted to control access. Shortly after its move to Arlington, the SIS was redesignated as the Signal Security Agency (SSA). Arlington Hall Station would serve as the headquarters of the SSA and its operating arm, the Second Signal Service Battalion (2d SSB), both under the command of Colonel W. Preston Corderman.

THE SIGNAL SECURITY AGENCY

A successful SIGINT operation requires many highly trained and disciplined people. The personnel at Arlington Hall engaged in all the facets of signals intelligence production, to include translation, traffic analysis, and cryptanalysis. The work required clear-headed, meticulous individuals, capable of assimilating detailed information rapidly. John Coddington, a supervisor in the Cryptanalytic Branch at Arlington Hall expressed the personnel need: "It is important that people of high caliber be assigned to this section...not only those who graduated from college, but who did well in college. A relatively wide background of reading and culture is highly necessary. A certain amount of linguistic ability is also essential. All the material handled contains foreign names and phrases and it is difficult for those who know English only."

A large work force was needed to sort and edit the volumes of enciphered messages intercepted by the 2d SSB's Morse operators in the field, but the SSA's wartime operations were hampered by a severe shortage of skilled personnel.

"I attended cryptanalysis school at Arlington Hall. There were a number of former school teachers in our battalion, with me being one of them."

Frances Wolverton (Cryptanalyst)



SSA personnel working at Arlington Hall were able to break the main codes used by the Japanese Army in World War II. "The civilian women in the office were mostly teachers from the more southern states who had left their jobs and homes to help in the war effort." Ann Brown (Traffic Analyst)

The radio intercept operators were an integral part of the SIGINT mission. The large volume of messages forwarded to the Hall from field units and monitoring stations made the code breakers' successes possible, but here too the SSA faced a manpower shortage.

Vint Hill Farms in Warrenton, Virginia was the first of the SSA's large monitoring stations. A second major field station was set up in August 1942 on the West Coast at Two Rock Ranch near Petaluma, California. Eventually, the 2d SSB added other detachments overseas: wherever it became desirable to conduct intercept operations for the effort at Arlington Hall (the battalion did not include signals intelligence personnel assigned directly to theater commanders).

In addition to carrying out their operational mission, the detachments at Vint Hill and Two Rock were charged with training personnel for the new and expanding detachments. After a few months of training, many of the male intercept operators were sent overseas. The demand for radio intercept operators overseas strained the 2d SSB's ability to man the East and West Coast monitoring stations.

WOMEN AND CRYPTOLOGY

The formation of the WAAC offered the SSA a golden opportunity to solve its manpower shortage. The fine art of manual Morse intercept, or "ditty bop," required intelligence and patience, not muscles. Women represented a heretofore untapped segment of the population, perfectly qualified for the job. Women who joined the military relieved men working in noncombat positions who were desperately needed to fight overseas. Cryptology was one of the most vital of those positions.

During the war years, the processes and procedures for reading and profiting from enemy codes and ciphers developed apace on an enormous scale, eventually requiring the services of more than 10,000 people at the SSA headquarters alone.

World War II served as the springboard for women's entry into the intelligence field. While a handful of women had been involved in cryptology prior to the war, this was the first time women entered the field on a large scale. Women with backgrounds in mathematics, photography, communications, and foreign languages became prime candidates for cryptology and assignment to Arlington Hall or to one of the monitoring stations.

"A group of us was sent to Sacramento Junior College, based on what I don't know, but it had to do with [Army classification] test scores. We were sent there to attend a radio school; hadn't even gone into basic yet. We knew nothing about why we went. There were about 25 of us and many of the women were telephone operators, and we studied electricity. We all made a crystal radio set. We didn't know why. We learned how to solder. Then after we'd been there around 6 weeks, they folded the school completely and we were sent off to we knew not where. The women who had the training as telephone operators were sent overseas. It was automatic, they all disappeared. The others of us, we weren't even in uniform at this time, were sent off to Des Moines, to basic training. Everything was so compartmentalized, none of us knew anything about what was happening to us, but it was exciting. So we got on the train and we found ourselves at Des Moines."

Ann Brown (Traffic Analyst).

CHAPTER TWO

A DATE WITH DESTINY

THE WOMEN'S ARMY AUXILIARY CORPS

President Franklin Roosevelt signed a "Bill to Establish a Women's Army Auxiliary Corps for Service with the Army of the United States" on May 14, 1942. Secretary of War Henry Stimson appointed 37-year-old Oveta Culp Hobby as the WAAC's first Director. She had only a small staff to deal with developing a cadre and training facili-



ties. Hobby and her staff faced myriad issues, ranging from a shortage of uniforms to defining the chain of command. Not the least of their concerns was the public's response to the WAAC. American society, culture, and traditions formed a strong popular opposition to women in the military. Although civilian businesses and factories had been employing women as clerks, typists, telephone operators and technicians for a long time, the general impression that



Enlistees in the newly established Women's Army Auxiliary Corps assemble at a departure point on their way to basic training.

women were suited only for work of a limited responsibility persisted. The saying was still frequently heard that “woman’s place is in the home.”

Hobby proved herself equal to the challenge. She was politically astute and understood how things got done in Washington and in the War Department. She had 10 years’ experience as editor of a Houston newspaper and had served as head of the Texas League of Women Voters. She had spent 5 years as a parliamentarian of the Texas legislature and had written a book on parliamentary procedure. Hobby believed strongly in the idea behind the WAAC. WAACs would be trained in noncombat positions and thus “free a man for combat.” She immediately began organizing a recruiting drive and training centers.

RECRUITMENT

Hobby’s recruiting campaign successfully got the message across. Alice Monson had just completed her courses at the Interstate Business College in Fargo, ND, when a WAAC slogan caught her attention: “The one that intrigued me the most was the WAAC poster which stated that the WAAC was the ‘girl behind the man behind the gun.’” Hobby’s sincerity aided her in presenting this concept to the public as she explained with conviction: “The gaps our women will fill are in those noncombatant jobs where women’s hands and hearts fit naturally.”

Women seized the opportunity to make an individual and significant contribution to the war effort. On May 27, 1942, for the first time in history, the US Army began recruiting women. The response was terrific. At registration centers in the



Recruits get their first ride in an Army truck on the way to Fort Des Moines railway station.

nation's nine corps areas, women of infinite variety scrambled to enlist in the first cadre of the Women's Army Auxiliary Corps. There were college girls and career women, shop girls and secretaries, teachers, housewives and widows. In Washington, DC, 750 candidates stormed WAAC headquarters on recruiting day, over three times the number anticipated. Twice during the day, officials ran out of application blanks. Laughing Eyes, a 28-year-old Creek Indian in full tribal regalia, was among the first of more than 250 women who lined up at Army recruiting offices in New York. Her brother was already in the Army and she was glad

"I was bored, wanted something different. I liked the 'Uncle Sam Wants You' recruiting poster. I thought, 'wonderful, someone needs us.'"

Alice Taylor (Radio Operator)

for the opportunity to do her part. One woman enlisted because her son, of fighting age, had been injured in an automobile accident and was unable to serve. Another joined because there were no men of fighting age in her family. In Chicago, 1,000 women enrolled for the WAAC. One out of every five enlisted because a male member of her family was in the armed forces and she wanted to help him get home sooner. Before the day ended, 13,208 women had applied nation-wide.

Applications for the WAAC officer training program were available at the recruiting stations with a return deadline of June 4. Dorothy Louise Kenna was working in the Dennison paper plant in Massachusetts when she applied for officers' training in the WAAC. She wrote on her application: "If I were a man I would have enlisted in the Army after the Japanese attacked Pearl Harbor. When the final peace is established and victory is ours, I will know that I have helped to the best of my ability."



Class of WAAC officer candidates listens attentively to a lecture on Army organization.

Although no more than 60 would be picked from each corps area for officers' training, applicants who were rejected could enlist later as privates. To be eligible for the WAAC a woman had to be a high-school graduate between 21 and 45 years of age, between 5 and 6 feet in height, and not less than 105 pounds in weight. She had to pass a physical examination and an intelligence test comparable to the one given a male Army officer. While in training school, officers would be paid \$50 a month. On graduation they could receive from \$125 to \$167 a month plus allowances. Enlisted soldiers' salaries ranged from \$21 to \$72 a month. On July 20 the first officer candidate class of 440 women started a 6-week course.

TRAINING

Fort Des Moines, Iowa, an old cavalry post complete with barns, riding halls, and hitching posts, was turned into the first training center. The

buildings, mostly stables, had to be modified and renovated to serve as barracks. Ill-fitting uniforms, by designers who did not seem to have women in mind when they put them together, were distributed. Director Hobby addressed the women. With exemplary military bearing and a benign face, she said very simply: "You have taken off silk and put on khaki. You have a debt to democracy and a date with destiny. You may be called upon to give your lives."

"At the time I enlisted, women in service was a new idea, subject to hearsay "Good girls don't do that." I knew no one when I enlisted, but made many good friends of all ages, careers, backgrounds, and nationalities."

Annabell Lundblad (Photo Lab Technician)



Director Hobby and COL Don Faith, Commander of Fort Des Moines, inspect the barracks that house the new WAAC recruits.

Officer candidates took courses in leadership, Army organization, and training methods. They learned how to work in groups and to take and give commands. Eventually WAAC officers took over the training of the rest of the corps.

The majority of the newly trained WAAC officers, the first of whom completed the course on 29 August, were assigned to Fort Des Moines to

“Basic training was a whole new experience. Up before dawn, doing calisthenics, taking orders, little privacy or time to call your own, KP, cleaning the grease trap. Always something, never ending. Yet there was always something that brought a laugh. Never too tired for a joke.”

Annabell Lundblad (Photo Lab Technician)

conduct basic training. As officer classes continued to graduate throughout the fall of 1942, many were assigned to staff three new WAAC training centers in Daytona Beach, Florida; Ft. Oglethorpe, Georgia; and Ft. Devens, Massachusetts. Others accompanied WAAC companies sent to US Army field installations across the country. LTC (US Army, retired) Martha Schuchart-Sachs remembered basic training at Fort Des Moines: “I must have done OK, because I was invited to attend OCS [Officer Candidate School] without applying. Suddenly officers were in great demand, so I completed the 9-month OCS course in 3 months.”

Basic training for privates began after the first cadre of officers was graduated. Students in both officer and enlisted courses studied military customs and courtesies, first aid, map reading, and care/maintenance of equipment. They had no trouble learning the material; however, becoming accustomed to



WAACs are taught physical education as part of the training program.

Army life was another matter. Patty Reed wondered what she had gotten into before she ever saw Fort Des Moines: “We arrived late into Saint Paul so the Red Cross got us a room for the night; then came a 35-mile ride in a truck from the train station to Fort Des Moines. It was my 22d birthday and I said to my friend, Jean, can I ask you a question? What am I doing freezing in the back of a truck at 5 a.m. in the morning on my birthday?” In the barracks, Patty and Jean encountered behaviors they had been unaccustomed to at home: “here I’m 22 years old, just an innocent little girl from Cashmir, Washington, and these gals were running around in their bras, half of them didn’t have that much on, going to the showers, and I said, Jean, look at that!” They would soon look upon privacy and individuality as things left behind in the civilian world.

The WAACs were organized into platoons, companies, and regiments. They awakened in the

morning to the boom of a cannon and the sound of a bugle and kept to a tight, crowded schedule throughout the day. In early morning (lights went on at 5:00 a.m.) basic trainees dressed, made a taut bed—no other kind would do in the Army—stood reveille, and cleaned the barracks. After breakfast they assembled on the parade grounds to practice close-order drill, their galoshes making straight tracks on the still-wet grass. Though Army men shook their heads at the sight of women trying to act like soldiers, all WAACs got a thorough grounding in basic infantry drill. However, they spent most

“I went in because there was a war on. My country was at war, and I’m American. What else do you do? You go where you think you can be of help.”

Rheta Creighton (Radio Operator)



Early morning drill practice. WAACs had to learn to live with the Army and the routines of a soldier's life.

of their day in classes. The official day ended with retreat at 5:15 p.m. After dinner, until taps, and for a full day and a half on weekends, the trainees were free to relax. Post movies and clubs offered entertainment. All trainees were required to be in their barracks by 10:30 p.m. Toward the end of basic training, the women were given the Army General Classification Test (AGCT) to place them in one of a variety of military occupational specialties. The need to replace male soldiers sent to duty overseas was critical. Before the first graduates started coming out of Fort Des Moines, 170 Army posts had put in bids for WAACs. At the end of their basic training, recruits were assigned directly to their first unit or to an Army Service School for specialized training. By April of 1943 about 25,000 WAACs had gone out to serve with the Army.

"I didn't want to be a baker or a cook. Every time they looked at me, I said 'radio school' and they finally gave up."

Opal Manion (Radio Operator)

THE WOMEN'S ARMY CORPS

The women's corps had been an unqualified success, and the Army received more requests for WAACs than it could provide. Although they were desperately needed overseas, women, as auxiliaries, had no military status. The Army could not offer them protection if captured, or benefits if injured. The problem was solved in the summer of 1943 when President Roosevelt signed a bill into law



Oveta Culp Hobby takes the oath of office as a Colonel in the United States Army, commanding the Women's Army Corps.

terminating the WAAC and establishing the Women's Army Corps (WAC) as a regular part of the Army. On July 5, Director Hobby became Colonel Hobby. The WAC accorded women pay, privileges and protection equal to that received by the men. During a 90-day conversion period,

WAACs were discharged and invited to enlist in the new Corps. Most of them did. Rita Berrian was a civil service office worker in Roseburg, Oregon, when she decided to join the WAC: "When I enlisted, my mother was quite upset, picturing overseas danger. At the time I was working in a one-girl

"In the morning one had to pull the blanket so tight that some inspector could come by and bounce a quarter on it. Also had a GI quilt that had to be rolled very small and placed at the foot of the bed. Figured I would open a small hole and get into that bed and not move all night and certainly would freeze to death rather than open that quilt. About that time a WAAC came along, pulled the blankets out and opened the quilt—sort of a form of torture on your first night."

Ann Underkofler (Radio Operator)



A WAC recruiter points to a photo of switchboard operators as she discusses opportunities in the Signal Corps.

government office, no men to speak of and life was boring. My room mate and I both signed up.”

Of the Army’s three major commands—the Army Ground Forces, Army Air Forces, and Army Service Forces—the last employed the highest number of women soldiers. WACs served in all the ASF’s technical services (e.g., Transportation Corps, Quartermaster Corps, Signal Corps, etc.). Regulations permitted WACs in “any suitable noncombatant positions,” or even in combat units provided the job was noncombatant and located in a fixed installation. A prime employer of women soldiers, the Signal Corps assigned WACs to far more than just communications duties. For nearly all of WWII the Signal Corps was also responsible for conducting the Army’s signal security and intelligence activities, the lion’s share belonging to the Signal Security Agency.

Beginning in 1943, SSA representatives traveled to Forts Des Moines and Oglethorpe to select women who met their requirements. The rigid stan-

dards specified college graduates with considerable training in languages, preferably the classics, a very high academic record, and an IQ of 120. Recruiters interviewed only those WACs who tested 110 or better on the AGCT. Policy for their selection specified “excellent character...citizens preferable native born...whose loyalty, integrity, discretion and trustworthiness are unquestionable, whose financial status and/or habits...render them unlikely to succumb to any temptations arising from these sources....”

“I joined the Army with another girl from my home town, Saint Clair, Michigan. My two brothers are blind and I joined in their place.”

Maxine Levy (Radio Operator)

“They went through the personnel records to be sure that you fit in so far as intelligence was concerned, but once they did that they lined us up, and they said, ‘we’ll take you, and we’ll take you,’ so, if you were fat or ugly or something, you weren’t picked. I guess I should be flattered, except sometimes those things made me angry. But anyway, I happened to be one selected to come to Arlington Hall.”

Martha Schuchart (Training Officer)

CHAPTER THREE

ARLINGTON HALL STATION

THE SIGNAL SECURITY AGENCY

In August 1943 the arrival of 6 enlisted women inaugurated the use of female soldiers at Arlington Hall Station. Others followed as security clearances were granted. After basic training, Ann Brown first found herself at Fort Holabird, MD: "When we finished at Fort Des Moines we were all put on a troop train. All of us were put into one car, and there were troops going all sorts of places. The train started, and we only knew we were going

east because that's where the sun was. We had orders, but everything we had was sealed." Once she received her security clearance, she boarded another train. With secrecy being the order of the day, her trip to Arlington Hall Station was typical: "I only knew I was going to Washington, DC, and somebody would meet me."

The very first women were lucky enough to be housed on the 3rd floor of the former girls' school, now the SSA Headquarters building. Lieutenant



The first WACs to arrive at Arlington Hall stayed on the top floor of the headquarters building, which had been a dormitory when the Hall was a girls' school.

Martha Schuchart was assigned as training officer: "The top floor of the girls' school was a dormitory, from 2 to 4 beds in a room. If there wasn't room, then you lived off post. But they were very nice about finding apartments for you. I was just right out of the gate in those Buckingham apartments, and I roomed with another WAC officer. The two of us had a one-bedroom apartment, but they furnished it for us. We paid our own rent, but then you got a quarters allowance."

By the end of December 1943, the WAC detachment of the 2d SSB at the Hall stood at about 225. The enlisted women were initially housed in one-story enlisted men's barracks. Ann Brown was assigned to Arlington Hall in the early years: "We were assigned maybe 20 to a room. We

had pot-bellied stoves at either end we had to tend. Wooden barracks, one story, double-decker bunks, no fluff, let me tell you. We put coal in the stoves, scrubbed floors, they were difficult to care for, but they were clean. When we saw where the Navy women lived we knew why they joined the Navy. They were in beautiful buildings."

"The new barracks were built of concrete block which held the summer heat. Many women, especially those living on the second floor, pulled their mattresses outdoors to sleep, returning them back inside each morning."

Ann Brown



A barracks room readied for inspection. "The early barracks had coal stoves for heat. The sergeant got rid of me when I couldn't get the fire going as one of my duties. My feelings were not hurt as I was sent to the new barracks."

Frances Wolverton

In the early months of 1944 the strength of the WAC detachment continued to grow, prompting the move into new two-story cinder-block barracks, designed according to WAC specifications and constructed to house 58 enlisted women. Frances Wolverton had good memories of Arlington Hall: "Our WAC home at Arlington Hall was a great place to be as it had been a girl's school and had a great landscape and an inside swimming pool, which I enjoyed. We would have Saturday morning marching drills and monthly inspections (when I hid my scrapbook under the mattress). We had excellent food and a post office. The new barracks were much improved over the tar-paper building we first lived in. The cinder-block central heating, two-story buildings were sunny and clean." Occa-

sionally the WACs assembled for parades, such as on one notable day in July when they paraded at nearby Fort Myer in a special presentation ceremony held in honor of Private First Class Mary Jane Ford of Vint Hill Farms. PFC Ford was awarded the Soldiers Medal for Heroism for risking her own life in an attempt to rescue a soldier from drowning.

The detachment, organized into two provisional companies, had a strength of 3 officers, 1 first sergeant, 21 sergeants, 89 corporals, and 454 privates. Some were trained as traffic analysts or cryptologists, but most served as personnel officers or in clerical positions. Although working at demanding jobs, the women weren't exempt from the routines of a soldier's life. Barracks duty and military train-



Employees arriving for work at Arlington Hall wait outside the gate while military police check identification badges.

ing were frequent additional obligations. Martha Schuchart noted, “No matter how long you’re in the Army, you’re always in training. I had to meet with the troops once a day, go through drill, go through all the courses, such as health—all things you train them in to keep them alert.”

Access to Arlington Hall was restricted to personnel on official business, and efforts were constantly maintained to indoctrinate personnel in the necessity of maintaining security. In addition to the perimeter fence, penetrable only at gates guarded by military police, double-steel interior fences erected around the operations buildings limited

entrance to authorized personnel only. Distinctive identity badges had to be worn at all times. The personnel at Arlington Hall—each division, branch, and section of the Signal Security Agency—were there to carry out signals intelligence and communications security operations.

By far the largest segment of the SSA workforce consisted of the codebreakers, cryptanalysts, and intelligence specialists dedicated to Japanese Army message traffic, but there were never enough people to cover all the work. The SSA maintained a vigorous civilian recruiting program, but resignations by civilian employees were high. Many came



Access to the operations buildings was controlled by an interior fence and guard post (small shack on the left).

“The first thing was to fill out all those papers, the next thing I knew, I got a call from my father. He says, ‘what have you done?’ I said, what do you mean? ‘Somebody came to Moorehouse (which is my hometown, Missouri) about you.’ The neighbors wouldn’t tell anything. All they would say was ‘there’s nothing wrong with her, she’s good.’ They first wanted to find out from my dad if I was in trouble or something before they would answer anything. That was when clearances first started. Later, everybody got used to it. People were always coming around asking questions about people.”

Martha Schuchart

to the Agency with exalted notions of the exciting nature of the work performed at Arlington Hall, only to discover during training that they disliked, or had no aptitude for, cryptology. Others simply were bored by the monotony of the tasks assigned. A civilian personnel counselor noted, "They are busy adding and subtracting all day long and do not know what it is all about. It would be helpful if they could be shown the results of their routine effort in some way."



Cooks and personnel on KP enjoying a break outside the WAC mess hall.

Most realized, however, that work far behind the front lines was important to the conduct of the war. Edna Frantz typified the majority of the dedicated women employees. Edna learned a vocabulary of 500 words in a week and worked on a crypt-analytic problem related to a new Japanese Military Attache code. Mrs. Frantz said, "I am here to do a job, however insignificant, because I want to contribute to the war effort." Civilian women like Edna who remained and persevered composed the largest group of the civilian/military team responsible for the Hall's outstanding success.

INTELLIGENCE PRODUCTION

Arlington Hall served as an intelligence factory, where an array of specialists and machinery constituted a well-organized system for processing, evaluating, and distributing intelligence. The SSA's headquarters staff worked in the stately, columned main building, while operational personnel labored



Friday afternoon—shining shoes for Saturday inspection. WAC on left is in PT dress, while the WAC in the center is wearing civilian shorts.

"All enlisted men and women ate in the mess hall. It ran on a 24-hour basis. All cooks were WACs. All enlisted personnel pulled KP. The job known as 'pots and pans' was considered by many to be the most desirable assignment. One man and one woman were assigned to it each day. To claim it, one had to be the first man or woman to arrive in the morning. The reward was that once the job was completed in the afternoon, 'pots and pans KPs' were released."

Ann Brown

in two large, unstately temporary buildings thrown up in 90 days in 1942 and 1943.

The work bays in the operations buildings were a cyclone of activity. Amidst clicking keys and clattering machinery, clerks, typists, and machine operators strove to keep up with the some 4,000 intercepted messages received daily from the 2d SSB's fixed sites and field units scattered around the globe. "You don't have to be crazy to work here, but it helps" was a generally shared view on the hectic, often tense workrooms, sometimes referred to as the salt mines. With the coming of the WAC, the strength of the night shift was built up to the point where intelligence production was being maintained 24-hours-a-day, seven days a week.

Cryptanalyst technicians followed established procedures for processing incoming messages and preparing them for the many jobs to follow. To cope with the ever-increasing workload, sophisticated IBM data-processing and other machines became

essential. They performed the onerous sorting tasks that would have been impossible manually. Besides card punching incoming teletype traffic and preparing message and heading files, WACs ran the tabulating machines (the precursors of modern-day computers) that sorted the incoming messages. Message files were divided into two sections according to type of traffic (Water Transport or Administrative).

"Security was very tight as we had to be certain all doors were locked behind us when at work. I still do this often! Even though we were women, usually talkers, we never discussed our work with each other. I trained myself to forget the specifics of the work."

Frances Wolverton



Officer staff of Area Specialists Unit. Analysts studied intercepts transmitted to Arlington Hall from the field stations and prepared predictions of enemy military movements and operations.



WOLVERTON

Specially designed machinery tested possible solutions to enemy ciphers, thus eliminating many hours of drudgery.

The Japanese Imperial Army had its own maritime transport network, which it coordinated with its own code system. Radio messages flashed back and forth assembling ships to transport the troops, passing convoy arrival and departure times, and coordinating myriad administrative matters involved in moving armies thousands of miles by sea. Reading Water Transport (WT) code messages enabled the Allies to interdict Japanese convoys. From the time US Army cryptanalysts broke the WT code in April 1943, sinkings of Japanese transports, oil tankers, and merchantmen increased dramatically.

The solution of Japanese codes and ciphers even produced important intelligence dividends for the war in Europe. One of the first and most significant intelligence coups was the intercept of a dispatch from a Japanese military attache in Berlin to Tokyo. When linguists translated the message on December 4, 1943, they obtained a detailed report on Germany's western fortifications. The military information contained in this message was invaluable in planning the Allied invasion of France. A message translated on August 12, 1944 has been described as "worth all the expenses of maintaining the SSA." The text described highly important information concerning the production of munitions in Germany.

Whether in administrative or operational positions, the WACs supported the continuous series of processing activities necessary for the deciphering and translating of intercepted enemy communica-

"I was moved to a small group where we worked coordinates to decode German messages. If we had possibilities, we used a small German machine to check the results. We put in busy hours especially when the Battle of the Bulge was in progress. I was awarded a special services medal for my work at that time."

Frances Wolverton

tions. Help was urgently needed in so many areas that it wasn't unusual for a WAC to be assigned, then reassigned. Many shared Ann Brown's introduction to the Hall: "For a couple of days I attended school to learn cryptanalysis, but suddenly they needed me somewhere in a special office. After a couple of days there, I found myself doing traffic analysis."

TRAFFIC ANALYSIS

There were methods of gaining intelligence from message traffic that didn't require reading the content of the messages themselves. Technicians in the Traffic Analysis Section compiled lists of addresses that aided analysts in identifying units of division or higher echelon and their message centers. Through their association with the unit headquarters, message centers indicated the presence of enemy troops in an area as well as their movements.

Traffic flow analysis—the study of variations in traffic volume and patterns of station activity—gave indications of impending enemy activity. WACs assigned as traffic analysts constructed order of battle maps and circuit diagrams that revealed enemy chains of command and communications.

In the weeks preceding OPERATION OVERLORD—the Allied landing at Normandy, France on June 6, 1944—the level of activity and anxiety at the SSA headquarters increased. Ann Brown remembered, "They were really pushing things very hard at that time, all the way around. And of

course, there was no air conditioning and you had to open the windows. You've got fans on to keep you cool and these fans would blow the papers all over, everything had to be clamped down. Any time you put down a piece of paper you had to find something to put on top of it. And that I think was the roughest time. Those long weeks were hard to take."

Marjorie was one of many WACs who toiled in a production line, searching each one of the thousands of intercepts for specific code groups. A match was known as a "hit" and was immediately referred to an officer on duty who forwarded the evidence to the next level. The process was called "crawling," which indicates the tediousness of the work. She remembered one day finding six encrypted letters in

a row that matched those she sought. This particular hit created a great stir of excitement, but like most of the WACs, Marjorie never learned the significance of her discovery—security considerations prevented an individual from knowing how his or her work contributed to the whole.

All signals intelligence personnel at the Hall, from clerk-typists to cryptanalysts, helped to assemble the jigsaw puzzles that produced a picture of enemy troop strength, intentions, and capabilities. The findings were distributed daily to the Special Branch of the Military Intelligence Section (MIS) at the Pentagon, where MIS analysts combined SIGINT with other information. The end product, disseminated to the Army and Army Air Forces, was priceless.



Technicians make an adjustment to a cryptanalytic machine, employed to solve enciphered message traffic.

"We scolded our boys for using old Ham signals instead of Army ones and telling who they had been out with and where the night before. The enemy could follow that group as they moved around."

Louise Eugley

COMMUNICATIONS SECURITY

Intelligence production was only half of the SSA's mission. An equally important goal was to protect the security of US Army communications. "After all, we were intercepting our enemies traffic, so we assumed they were doing the same," Ann

Brown explained regarding her assignment to monitor US Army traffic.

"We wanted to see what they could learn from our traffic. We followed the volume of traffic and the priority of traffic that was sent to figure out how we might fix it so they would not know what we were doing. There were specific things such as the port of embarkation, New York City, and you could tell exactly what date every convoy sailed three days before they sailed. Traffic was all one way; ports in England were receiving but not sending much. Easy to know when ships would be at sea...if traffic were monitored by the enemy. Don't know if they did, but many ships were sunk by [enemy] submarines in any case."



One of the important developments in cryptanalysis was the invention of Rapid Analytical Machinery (RAM). Text to be analyzed was fed into these machines on film tape. WAC at the left heads a production line for spacing, preparing, and checking tape.



The Station Performance and Control Unit controlled intercept missions and studied the quality of the intercept operators' work.

In the Protective Security Branch, one of the missions was to devise methods to conceal traffic patterns over the immense radio-teletypewriter links that the Signal Corps provided to the Army Air Forces. Traffic analysts monitored the massive flow of radio traffic over the Army's communications channels and logged the numbers and flows of messages to and from various cities. Ann looked for specific call signs: "It was easy to know if and when President Roosevelt was scheduled to travel abroad. The president's aircraft, the Sacred Cow, had its specific call sign and, for a period of time prior to his departure, the aircraft would contact refueling spots along possible travel routes. There was not much other telegraphic traffic sent or received by Sacred Cow except when long trips were planned. If enemies tuned in, they'd know exactly where he's going to land. If the enemy knew that, they could shoot it down."

Communications security personnel attempted to caution and advise Army message centers about measures to defeat the enemy's signals intelligence operations. The greatest emphasis on traffic analysis came in late 1944 and early 1945. The Allies had won a great victory in the winter battle of the Ardennes, and in February the eyes of the world turned to Yalta, for in that city the Big Three powers of the world met to discuss affairs behind closed doors. Ann recalled, "I think they were finally planning by that time to cover up in some way or another. When the Yalta Conference was being planned, our officers were briefing at the Pentagon. [Afterwards] they seemed depressed. I thought that maybe they couldn't put over the point that these things were being intercepted, but maybe they did. All of a sudden the women in our office—four of us WACs—were told to be prepared for a trip. The only thing I could think of was that we were going

to Yalta. But the time came and went and nothing happened. Then after it was over, somebody came up and said, 'you were to have gone to Yalta, but as usual, they decided they didn't have facilities for women.' I was so mad, after all, Sarah Churchill was there, and I thought I could have roomed with her!" (Sarah Churchill was a photographic reconnaissance specialist enlisted in the British Women's Auxiliary Air Force. She attended the Teheran and Yalta Conferences with her father, the Prime Minister.)

To secure US Army communications from enemy radio intercept operators, the SSA developed new enciphering and deciphering machines, which were synchronized with the teletypewriters at both ends of the circuits. Among the first and most significant of these machines was the SIGABA. While the enemy never broke the

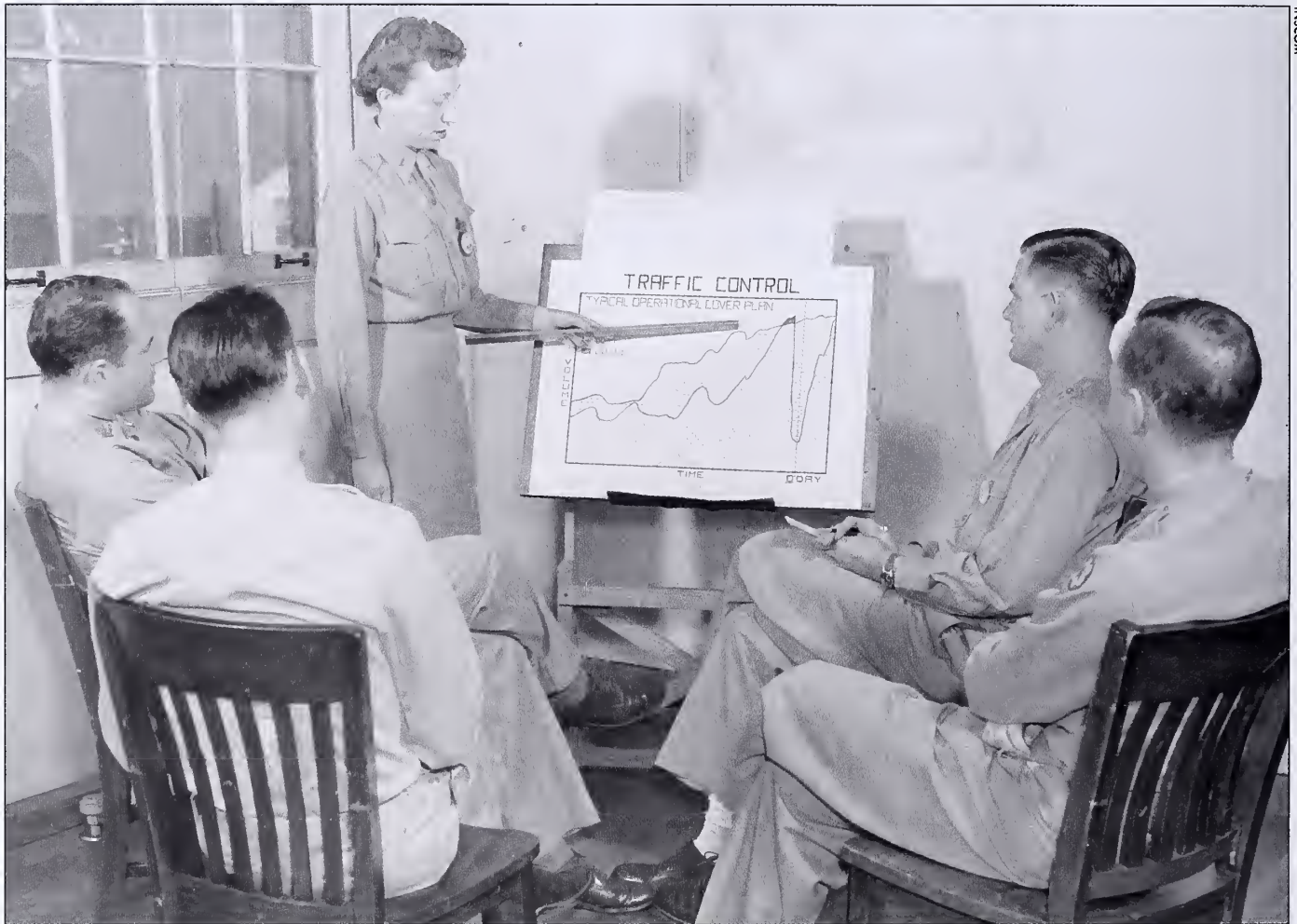
SIGABA's security during the war, the Army did have a close call when a truck carrying one of the machines disappeared near Colmar, France in February 1945. After 6 weeks of frantic searching, soldiers found the lost SIGABA in a river, still encased in a safe. Apparently, the truck had been "borrowed," but the perpetrator hadn't wanted its cargo, which he threw in the water. Amidst fears the system had been compromised, the SSA hastily developed and issued new cipher rotors. Ann remembered the heightened activity and stress: "There was tremendous pressure at that time. You could feel it... they had us working for 2-week periods straight. Another section that had to do the rotors had to work three shifts. They were having to reproduce them all and send them overseas because they had lost this truck."



IBM runs are studied to determine traffic characteristics. Technicians prepared Monthly Precedence and Classification Break-down charts as records of station-to-station traffic volumes.

The secure cipher machines the SSA provided the Army were essential to the prosecution of the war. Despite the seemingly insurmountable challenges, the SSA preserved the integrity of US Army

communications from potential cryptanalytic attack, while producing an immense amount of highly valuable intelligence.



Operations officers plan a deception program. Graph depicts estimated bona fide traffic flow, contemplated volume of control traffic required, and possible diverted traffic.

“[When I saw] the photo of the WAC officer pointing at a graph with three male officers seated facing her, my eyes fixed on the graph. I thought ‘it’s mine!’ Each graph represented telegraphic communications in one direction between two locations—what sender (A) sent receiver (B). A second represented telegraphic communications between the same two locations in the opposite direction. Each vertical rise of a bar along the graph represented a 24-hour period—Z time. A specific color represented each precedence on the graph: ROUTINE, PRIORITY, URGENT and NIACT.”

Ann Brown

CHAPTER FOUR

THE SECOND SIGNAL SERVICE BATTALION

RADIO INTERCEPT OPERATORS

Sitting before the small wood table holding the special black typewriter of all uppercase keys, the radio intercept operator deftly turned the dials on the Halicrafter radio receiver to tune in a targeted frequency. A poster taped to the wall at the end of the windowless bay warned ironically: The Enemy is Listening. To the right of the poster a row of large round clocks displayed European, Asian, and Pacific time zones. Underneath, the trick chief sat at the scarred oak desk, reading various

"I thought I would like to be an ambulance driver or work in the motor pool. However, after taking a series of tests, the government thought I could distinguish the difference between a dit and a dah better than the difference between a screw driver and a wrench. So they sent me to radio school."

Sophia Risko



Midland Radio School class photo

sheathed reports, rising only occasionally to help an operator calibrate the equipment.

The midnight to 8:00 shift was on duty, listening to and copying messages plucked from the airwaves by an array of antennas pointed to specific areas of interest, such as Axis-occupied Europe or the Japanese-occupied islands in the Southwest and Central Pacific. For the WAC sitting among her male counterparts, the work held no challenge, for she had been trained. Any preconceived notions about the glamour of working for intelligence had been dispelled long ago. She didn't think about the possible importance of the transmissions as she dutifully copied the code that pulsed through her headset. Whatever might transpire during her shift, or whatever she thought about her work, would not be discussed beyond the four walls of the operations building, never in the barracks or mess hall, and never with an outsider. She belonged to a truly "members-only club"—a WAC company of the Second Signal Service Battalion (2d SSB).

The WAC radio intercept operators were an elite group, carefully chosen and painstakingly trained. Of the first 800 WAC soldiers initially authorized for the SSA, only a third were radio intercept operators.

The 2d SSB's need for personnel was so critical that some WACs were assigned before they had completed their basic training. Mary Bissinger was pulled out of training camp at Fort Oglethorpe to attend radio school: "Since I could type and was

familiar with Morse code, I was sent along with a handful of others from my company to join a group going to Kansas City, Missouri to train at the Midland Radio and Television School." Because the Signal Corps recruiters could not fully disclose the nature of the work to be performed, many women who were selected joined with the understanding they were entering the "communications" field, only to find they had been recruited into military intelligence. The results of Katy Jones's aptitude test listed "communications" as one of her choices. In her mind she imagined becoming a telephone operator and thought, "The switchboard with all the lights was interesting, so I said yes, I'd like to work in communications. Little did I know I'd have to differentiate between dots and dashes."

The rigid selection standards ensured only the best-qualified were recruited for SIGINT duty. Besides meeting exceptionally high standards, all the women were thoroughly investigated prior to this special assignment. Alice Monson remembered, "After being screened very carefully by the Federal Bureau of Investigation, I was selected to attend specialist school for training in radio and code...."

Considering their qualifications, any of the women could have enjoyed well-paying civilian jobs. As war reduced manpower, the country experienced an employment boom that swept single women and mothers of families into jobs left vacant by men called up for military service. Many entered traditionally masculine fields—banking, engineer-

"The first thing that we learned was the International Morse code. That was our first introduction to code. And it's just a little flavor for that. We got in there on a weekend to start school on Monday, and in the Sunday paper they had the Morse code, so I just memorized it. I was ready on Monday morning. And I already knew how to type because I had done a lot of typing, so I had a leg up. I didn't have to learn the code from scratch."

Katy Jones

"The 20 weeks we lived in Kansas City included a very hot and humid summer. We were required to wear long cotton stockings, khaki skirts, long sleeve shirts, and ties. Air conditioning was via fans and open windows. Many downtown hotels housed groups of men and WAC students, in separate hotels. Our classes were also segregated, held a few blocks away, to which we marched."

Mary Bissinger

ing, accounting, and technical work. A college graduate could earn a starting salary of \$1,600.00 a year with the promise of speedy raises. To become a WAC meant giving up the privacy and comfort of home, the choice of working conditions, and the privilege of moving to a higher paying job.

What had brought them to the 2d SSB was not solely a desire to do their part for the war effort or women's equality. All self-possessed and adventurous women, they left mostly ordinary civilian lives for the promise of new, and hopefully, uncommon experiences in the military. Radio intercept operator Mary Bissinger admitted candidly, "I think if everyone were being completely honest, it wasn't patriotism or flag-waving that they joined for, we

all had a sense of adventure and wanted something different." Most of the intercept operators shared the same desire. To some, adventure meant travel. Getting away from home was particularly attractive to women from rural areas who felt stifled by their environment. "Both my parents were gone, and I was living in an apartment. I had been raised on a farm in Arkansas and there wasn't even a train. In the service I'd get to go places and see things—there's no tracks in the foothills of the Ozarks." Katy Jones didn't travel far from Arkansas for her radio training. She was sent, along with other WAC recruits, to the Midland Radio and Television School in downtown Kansas City, Missouri.



Although they would ultimately be stationed at fixed intercept stations, the WACs were given field radio intercept operator training at Camp Crowder, Missouri.

RADIO AND MORSE CODE SCHOOL

With the arrival of the first group of students, the upper floors of the 16-story Aladdin Hotel were taken over by the WACs who were to live there during their training. Putting soldiers up in hotels wasn't unusual. The Army took over hotels all across the country to billet troops. Soldiers drilled in glittering ballrooms and attended military training in once-lively cocktail bars. The Aladdin's lower floors, however, remained open to the public, and though the Aladdin boasted "a popular priced grill, circulating ice water, fans, and complete hotel service," the amenities mostly extended to hotel customers. Assigned four to each two-bedroom suite, WACs used the stairs even if they were on the 16th floor because the two small elevators were reserved for civilian guests. If space permitted, they could ride up, but were expected to walk down. Unless they could afford to pay for their own meals in a cool, attractive restaurant, WACs ate mess-hall style in a nearby building. The WACs suffered the summer heat without air conditioning and appropriate uniforms.

Clothing and supply difficulties plagued the WAC, a situation that frequently resulted in a comedy of errors. The women froze in winter and baked in summer. Ann Underkofler had been issued a coat at basic training: "We were issued men's mack-inaws with wool collars that in a few days had removed the flesh from your neck. All were size 40. Mine came below my knees as I was 5ft. 2in." Concerned about the image the WACs presented in their ill-fitting, continually wrinkled, cotton uniforms, an officer in charge of the students allowed

them to purchase their own. Some women gladly paid to replace their Army issue with tailor-made, summer-weight worsted uniforms.

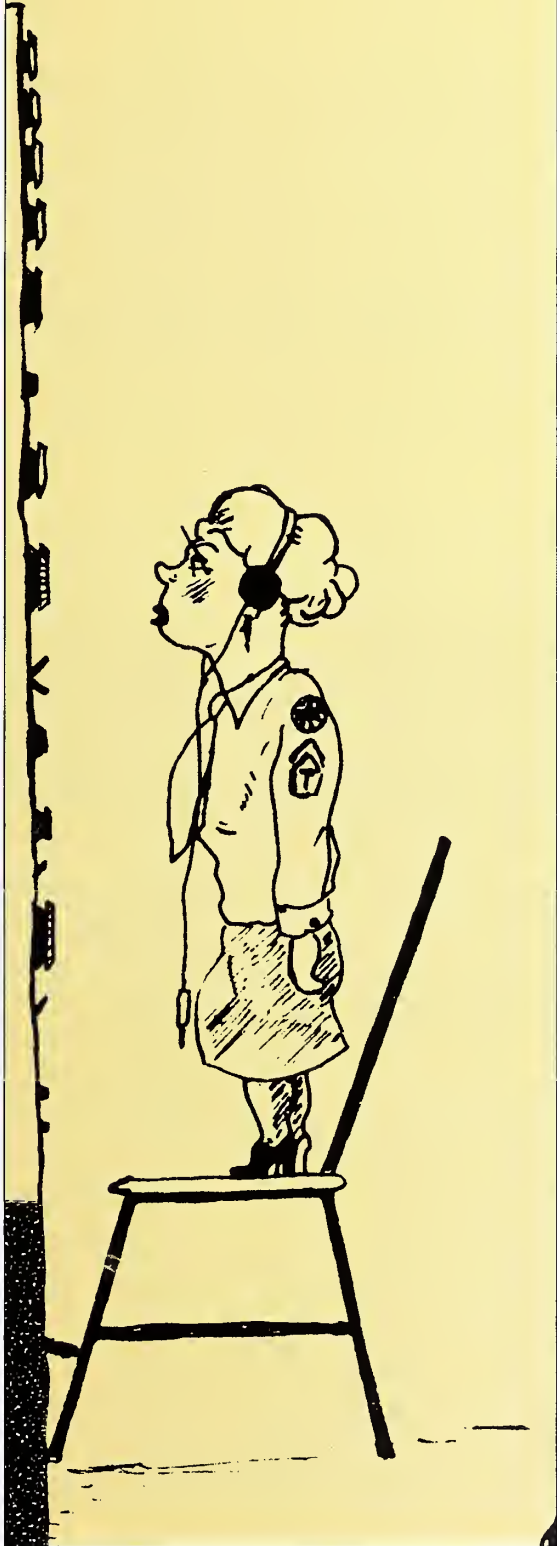
Each day they marched to the school, a few blocks from the Aladdin. To mask the real purpose of the training, the curriculum innocuously listed the course as radio operating. The WACs studied radio theory, radio nets, touch typing, and transmitting and copying code. At school, the women threw themselves into their work. Weekdays were spent in class, code practice and study right up until, and often after, dinner. The end of the day was officially 9:00 p.m., when all WACs were to be in their rooms. On Saturday morning, they were required to take part in drill and parade, but then had the remainder of the weekend off. Sunday they had to themselves, and Kansas City offered a number of enjoyable activities that provided much-needed relaxation. The group's poet, Margie Carpentier, described their time off: "Code-happy kids with weekend passes to break the routine of radio classes." They walked in the park or went horseback riding. Some risked venturing beyond established boundaries, but curfew was at 11:00 p.m., and they knew they had to be at their best for Monday's classes.

"I attended radio school at Boston Latin School during the summer and fall of 1943, before entering active service. They shut down the school before we were finished. They needed us badly."

Louise Eugley (Systems Analyst)

"My roommate's folks lived in Kansas City. Her dad would come by and get us on the weekend. Actually, we were out of bounds, but that's all right, he'd bring us back. But, I got this tetanus shot, and my arm swelled up, and felt on fire, and I had to cut my shirt to get it off my arm, and so I was out of uniform. The lieutenant (she was terrible) said 'you're out of uniform,' and I said that's my tetanus shot. She said, 'well you should have called, you'd better go see the doctor.' I told her it didn't itch anymore, but she insisted I should have gone to the infirmary; and I said, I'll try to remember that the next time ma'm."

Patty Reed



It was a grueling 20 weeks, and not all made it. Those who did received a Certificate of Achievement, confirming they had completed “the U.S. Army Signal Corps Prescribed Course of Instruction in High-Speed Army Radio Operating.” With diplomas fresh in hand, the graduates gathered their belongings and boarded the train for Camp Crowder, Missouri, about 170 miles south of Kansas City.

CAMP CROWDER

The WACs were met at the train station by Army trucks. Rheta Creighton remembered the scene: “The WACs brought so much stuff. They had hangers over their shoulders—you couldn’t put them in the barracks bags, anything sharp couldn’t go in the barracks bags—and they were standing there surrounded by all this stuff that you never could carry. And this male sergeant was standing up there and he said ‘take up your barracks bags and fall in.’ Well, somebody started to giggle and we all roared, and he looked down and saw all the stuff and said to the men, ‘throw those bags in the trucks.’ So we went off with our hangers, and our radios, and whatever do-dads we had.”

Camp Crowder hummed with activity. Recruits streamed into the large Signal Corps Replacement Training Center to be converted into signalmen for overseas units. As many as 3,000 men at a time passed through the 13-week course for radio operators. The new addition of military pulchritude was a welcomed sight, as the intensive training left little time to enjoy the few distractions offered by the nearby small town of Neosho. For

“We were sent to Camp Crowder, Missouri for advanced training. Back to the barracks life and marching to and from school. About 40,000 men there, but IF we got the weekend off, another girl and I would hop on the train [to Kansas City] and then spend most of our time in the restroom hiding from any WAC officers that might be around as we were not permitted to go that far from camp.”

Ann Underkofler

the WACs, Camp Crowder meant a return to barracks living, drill, and inspections to ensure the new arrivals' conformity with the army way of doing business. Rita Berrian recalled school at Camp Crowder included "a lot of marching to class, map reading, nice dances and nice boys."

The WACs' training was devoted to sending and receiving international Morse code. They practiced both fixed station radio operation and field radio operation. Katy Jones was one of the first to attend the course: "In case we had been in an actual war zone, we would have had to have the generators and everything. We had to learn all of that, and a little bit of maintenance. We had to know how to keep them going. We started out printing and then they made us script. Then they said, 'now you've got to learn to print with both hands, because, if you're out and you're receiving away and your right arm gets shot off, or whichever arm, you've got to learn

to do it with both hands.' So we had to learn to be ambidextrous. That wasn't too easy, but it was something that was required. By then they had things organized enough, the war was far enough along, that they knew they'd need some of us on the West Coast and some on the East Coast."

"Our class graduated on September 4, 1943 and we were sent to Camp Crowder, Missouri for 4 weeks of further code practice. It was here that we were given our choice of assignment. To the East coast at Vint Hill Farms Station, Virginia or to the West coast at Two Rock Ranch, California."

Mary Bissinger



WACs practiced sending and receiving Morse code.

CHAPTER FIVE

THE WACS OF TWO ROCK AND VINT HILL

FIELD INTERCEPT STATIONS

The Signal Security Agency had allotted the 2d SSB a complement of 150 enlisted women to Vint Hill Farms Station and 100 to Two Rock Ranch Station. Mission requirements had priority, but personal reasons, such as having family in the area, were taken into consideration when assignments were made.

The Army used Vint Hill and Two Rock not only as “listening posts,” but also as training facilities. Two Rock Ranch was a training school for WAC radio intercept operators. Much of this schooling was practical, on-the-job training. The Vint Hill Farms school trained Army men and

women in cryptanalysis, traffic analysis, and cryptographic equipment maintenance. As intercept stations they were similar: both were equipped with elaborate arrays of high-directivity antennas for all-round coverage. Nestled in the rolling hills of the countryside, built to blend unobtrusively into the surroundings, Vint Hill and Two Rock shared an ever-pervading aura of secrecy. The bucolic locales veiled the Army’s activities.

VINT HILL FARMS STATION

Vint Hill Farms’ manor house, carriage house, silo, and fences gave the appearance of a prosperous southern farm. Although some of the farm buildings were torn down to make way for barracks



Whether at the intercept stations or SSA headquarters, training new recruits was essential to effective SIGINT operations.

and support facilities, the more substantial structures, such as the barn complex, were converted to operations buildings where enemy radio transmissions were intercepted. The disguise was intended to fool the enemy, but to even a casual observer the forest of antennas and the distinctive transmission lines connecting them to the barns would indicate this was no ordinary farm; Vint Hill produced a rich harvest of intelligence.

On October 9, 1943 the first enlisted WACs reported to Vint Hill and were formed into the SSA's first WAC company of the 2d SSB. Upon arrival, they attended orientation briefings and classes designed to develop the necessary knowledge and skills to become a part of Vint Hill's vital, secret mission. The women's presence produced a noticeable change in the enlisted men. They no longer had to be reminded to shave, and the sale of after shave quadrupled at the PX. The classrooms

took on a new odor as the scent of Channel Number 7 and Tabu mingled with GI soap. For the most part, the WACs were welcomed at Vint Hill; an unattributed source observed that "the loss of one perfectly good latrine by the enlisted men" was the "one sad note of the coming of the WACs."

The WACs found the atmosphere much more relaxed than at Camp Crowder, so some let their hair down—literally. A staff officer noted that school regulations had never envisaged the entry of females, so many little incidents were allowed to let pass; he mused, "What could be done when Ginney Blakemore began to put up her hair during class, or when Summerhalter showed up with curlers in her hair? Both continued working, so not even the charge of loafing could be pinned on them. And the cigarette holders nearly a foot long—strictly not GI, but apparently not contrary to the rules. Bell got closer to the borderline when she impaled a



Soldiers of the 2d Signal Service Battalion outside the operations barn.

marshmallow on a pencil, then toasted it over a match, but she was ahead of the rest of the class and had earned the right to an eccentricity or two.”

In a tacit admission of having caused their class leader, SGT Parker, some anxiety, the WACs observed his birthday with gifts of cigarettes, candy, and aspirin—the later to remember them by, they said. Of course, the men wouldn’t let pass an opportunity to play a joke on the WACs; for example:

When the WAC mess hall at Vint Hill asked to borrow some bread, the cook in the enlisted mens’ mess slipped a knife into one of the loaves, which, predictably, was discovered by the WAC cook who sliced the bread. She guessed it was a joke, but as chance would have it, the WAC mess officer happened to be there, and she jumped to the conclusion that conditions of gross neglect prevailed at the Fort Belvoir bakery, and, therefore, nobody’s life was safe. An unofficial history of Vint Hill Farms records what happened next: “So . . . she called the Post Headquarters, and the Adjutant



Intercept bay in barn at Vint Hill Farms Station.



WAC company at Vint Hill Farms Station.

forthwith sent an angry letter over the Post Commander's signature through the Fort Belvoir Commanding Officer to the [Belvoir] commissary officer. The latter gentleman got after the astonished bakery officer who conducted an investigation which, of course, revealed nothing. Endorsements bucked back through channels and everybody was mad at everybody else. Meanwhile, the WAC cook, having confirmed her suspicions, finally got up enough courage to set the Mess Officer straight. An embarrassed explanation went back up through channels and all concerned were generally uncomfortable for several days."

The instructors prepared Japanese and German code-traffic tapes to use in training intercept operators. In addition to the practice tapes, phonograph records were made that simulated Japanese Army radio nets. Texts on enemy army radio procedure were continually being revised or supplemented. These texts proved valuable in training intercept

operators and analysis personnel. Some in the cryptanalysis class, whose code aptitudes and personal attitudes were compatible with intercept work, took the Vint Hill school's Morse Code course and became interceptors.



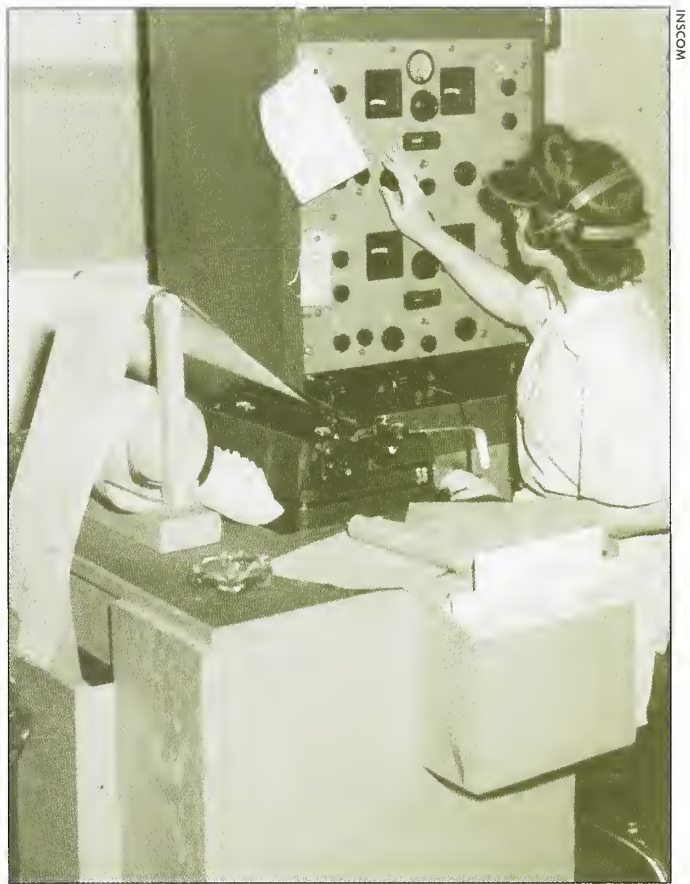
Reading tape at transcribing positions.



Charlotte and Constance Nourse entertained soldiers at Weston, their estate near Vint Hill Farms Station.

Men and women worked side by side on shifts, or “tricks.” Each trick was normally 8 hours and rotated so the operators shared working days, evenings (or swings), or “mids” from midnight to 8:00 a.m. After working three day, three evening, and three midnight shifts, the operators had three days off. Depending on target activity in Europe, which was normally 5 to 8 hours ahead of local Washington, DC time, it was sometimes necessary to assign some operators permanently to “mids.”

They tuned their intercept receivers and copied traffic directly “off the air,” usually using typewriters with all capital letters, known as “mills.” The experienced foreign communicators exchanging messages in Europe sent precise, uniform signals at speeds averaging from 25 to 30 words per minute. Interceptors normally copied several letters or up to a group behind the speed at which they were writing or typing. A good intercept operator learned to record several signal groups in her mind, while writing the groups sent previously on a pad. However, with mechanical assistance, messages could be sent at speeds beyond the capability of most interceptors to copy “live.” It was necessary to record these transmissions and then use techniques to slow them up so they could be transcribed.



Radio Intercept Operator at one of several workstations that lined the operations buildings at Two Rock Ranch.

“They said naturally we couldn’t all go to the same place. But, we were to give them our reasons as to why we wanted to go and they would, as far as they could, honor our requests. I had a brother in the Navy who was going in and out of San Diego and I had aunts and uncles and cousins out in California, and I said I would like to go to the West Coast if I could. They sent 100 of us to Two Rock. And, by then, we knew we were going to be learning Japanese. We had just gotten out of this other schooling on the international Morse code, which we didn’t use any more, so we had to learn the Japanese code.”

Katy Jones

“My first impression was that of an old stockade. There were four one-story barracks...all forming a square around a large patio that was enclosed by high wooden stockade-like fencing. We wondered if it was to keep out the men (who outnumbered us five to one) or the sheep that roamed all over. The sheep were there to keep the grass mowed in the antenna fields. Our barracks had the standard 1940’s double-decker bunks with a small standing clothes and foot locker for each person. Water supplies were often critical on the Post. At those times our showers were limited to 2 minutes, twice a week.”

Mary Bissinger

Off duty, the women had plenty of male company. Picnics and hikes along the many country roads and fields surrounding Vint Hill were popular activities. The hospitality house in Warrenton, run by the USO, provided various entertainments, including weekly dances. Many soldiers found respite from study and work at Weston, the estate of Miss Charlotte and Miss Constance Nourse. The Nourse sisters were southerners in the traditional sense of the word and made Weston a center of hospitality for military personnel from Vint Hill. They offered soldiers, weary of Army food, a home-style breakfast of oatmeal with brown sugar and thick cream or dinner with fresh vegetables and apple pie. Playing cards on the front lawn was a favorite past-time.

For those seeking more lively activity, Headquarters, SSA, and Washington, DC, were less than a 40-mile bus or train ride away. The workers at Vint Hill Station found Washington to be a hospitable and exciting town, with USO activities and many other ways to spend their time. On their days off, they could catch trains to Baltimore, Philadelphia, New York, or to points south. Whatever the destination, the object was to catch a returning train that would arrive back at the local Trailways station just before midnight, and then board the late bus to Vint Hill.

TWO ROCK RANCH STATION

The women assigned to Two Rock Ranch shared similar experiences with the WACs at Vint Hill, but in a completely different environment. Many who had requested the West coast had been lured by California's renowned beauty: the pine and redwood forests of the north, the trackless deserts of the south, the endless miles of glittering sea coast, and the blue-green mountain skylines of the west. Inside these bounds lay Two Rock's 876 acres, just 10 miles east of the Pacific Ocean. Built on what had been seven small sheep ranches, approximately 12-miles west of Petaluma, Two Rock's ranch-like appearance disguised its primary mission—the interception of Japanese Telegraph Code. Martha Schuchart recalled, "At Two Rock we had



Two Rock Ranch, Petaluma, California.

"Our work days were mainly work, sleep, eat, do chores. The 3 days off were wonderful! Often there would be an organized trip and picnic to such places as Russian River, Sonoma Valley and wine country.... San Francisco was only 40 miles south, so by two's or three's we would hitch hike there. Hitching a ride was the standard mode of transportation for people in uniform. A good "thank you" was an offered pack of cigarettes to the rationed civilians. When people would ask us what we did at Two Rock it was easy to say 'I'm a cook, a driver, a secretary, a medical aid, a movie projectionist,' since some of the WAC companies really did those jobs. To our families back home, who knew we had been to radio school, we just wrote 'we may not talk about our work' and that was the end of that. There were plenty of other things to write home about."

Mary Bissinger

little flat buildings just like you'd have on a ranch. We had sheep, chickens, and ducks." The only evidence of Two Rock's secret mission was the cluster of antennae, visible from the nearest county road.

The WACs assigned to Two Rock Ranch Station endured 5 long days on a train from Camp Crowder to San Francisco. They made the remaining 50-mile trip on US Highway 101 to Petaluma by bus. One of the new arrivals remembered "from San Francisco we were put on buses and started north. We crossed the Golden Gate Bridge and then into the country and it seemed like forever when we arrived at a bus station in Petaluma. There they had trucks to take us out to the base... umpteen miles away from a city, near a dark, small town." Another recalled, "The barracks were dusty, smokey, all a mess when we got there. We were assigned a lot of kitchen duty, and we'd all hide so we didn't get KP. We had to eat with the men and they were lousy cooks. There were cockroaches in that place."

After settling in to their barracks, which would be home for the next 2 years, they assembled at the post theater for an orientation briefing. At that time they were ordered never to talk about what they did nor mention their work when writing home. Any WAC violating her security responsibilities was potentially subjecting herself to Federal prosecution

"Copying Morse code was mentally stressful—girls called it 'dit crazy.'"

Maxine Stewart

and could be sentenced to prison. Each group was only told what they needed to know to do their jobs and so performed their assigned duties with little knowledge of what was happening even in the next room. The WACs assigned to the "tape room" at one end of the operations building didn't know what the radio operators at the other end were doing.

The prospective radio intercept operators had first to master Kana Morse, the Japanese version of Morse Code. Based on Katakana, one of the several written forms of the Japanese language, Kana Morse required learning seventy-one symbols, as opposed to the 26-letter alphabet of International Morse Code. It also demanded proficiency because expert Japanese naval operators were capable of transmitting at speeds of 40 to 50

words per minute, although 20 to 25 words per minute was the norm.

In the final stages of training, instructors evaluated the WACs on their ability to copy actual Japanese naval and army air-to-ground communications transmitted as Kana codes. The women were assigned to a trick—8 a.m. to 5 p.m., 5 p.m. to 1 a.m., or the night shift, 1 a.m. till 8 a.m., and each was given specific frequencies to monitor. The tricks rotated weekly to a new time. At least 2 months of on-the-job training, regularly intercepting Kana Morse, was necessary to maintain the speed and

"We got put into the men's dining hall and the one thing I remember is this big hairy arm going into the pancake batter, coming out like this and flopping the pancakes. I'll never forget that. When we had a separate little dining room of our own, it was very nice because the WAC cooks made nice little fruit cups, and they cooked your eggs to order, and they did little things. And we could invite a guest on Sunday."

Rheta Creighton

"The first CO we had at Two Rock was a witch. Morale was very low because of her. She'd pick on us for every little thing. She was annoyed that she didn't know what was going on in operations. She wasn't allowed to know. She was in administration. One time she somehow got in, but she had no business being in there. They kicked her right out. They sent her off somewhere soon after. Then we got Kay Cross, and she was wonderful. She would discipline you, but it was always fair and you deserved it."

Lee Chamberlain

proficiency to keep pace with Japanese radiomen. Despite the best efforts of the intercept operators, SIGINT operations would not have been nearly as successful without the innovative machinery designed by engineers at Arlington Hall Station.

Among the new items of equipment installed at intercept stations were “multicouplers.” Multi-couplers allowed the signal from one antenna to be coupled to several receivers and a time-delay device, which accomplished a delay of from 3 to 10 seconds between the time a signal was received and the time it had to be copied. The delay made it possible to start a recording device to take down the entire transmission for later transcription.

When their assigned frequencies weren’t active, intercept operators worked in the tape room. Some WACs were assigned there permanently to copy the coded messages from the tapes, but the tapes were running constantly and there weren’t enough transcribers. Radio Intercept Operator Katy Jones preferred intercepting messages live to transcribing from the tapes: “Fortunately we were assigned certain frequencies, but when our stations were not sending, we were supposed to go to the tape room. To me the tape was terrible, because I’m nearsighted and the motion would get to me. The tape was going all the time. There were little holes cut in the tape—this is a dot and this is a dash—di da, was ‘a’ and da dit dit dit was ‘b’ and so on, and that would just kill my eyes.”

The transcribed messages were forwarded first to the Traffic Analysis Section. Traffic analysts looked for certain key addresses (signatures) which would denote traffic of interest. They screened piles

The code breakers at Arlington Hall Station read intercepted messages revealing that the Japanese were planning to change codes. Through cryptanalysis, they were able to provide the intercept stations with the new code, and the WACs at Two Rock Ranch went back to school to learn it. The Japanese operators began using the new code “on the date and on the specific minute that they had said they would, and at that point we could send and receive better than they could. That, I think, is an auspicious occasion for everybody.”

Rheta Creighton

of intercepted messages, which generally fell into the categories of government or diplomatic, military, and commercial. One of the tasks was to screen intercepts for certain types of code identifiable by indicators (combinations of numbers or letters). The Traffic Analysis Section then forwarded the intercepts, over secure teletype, to the SSA Headquarters at Arlington Hall Station to be analyzed, decrypted, and translated.

The relationship between the Hall and the intercept stations could be described as a perfect symbiosis. From the intercepts sent to the Hall, the code breakers not only learned of the Japanese plans to change codes, but were able to provide the new code to the intercept operators. Lee Chamber-

“One day a lieutenant came into operations. She had no business being there. She watched and waited for her chance then snuck in. She stood behind me and was giving me trouble about my hair being too long. I had the earphones on and was working, so I wasn’t paying any attention to her. When the trick chief, the Sergeant saw her, he yelled, ‘What the hell are you doing in here.’ She told him that she was talking to me. He said, ‘She’s not listening is she? Now get out of here.’ She said she could have him court martialed, but he told her, ‘I don’t think so.’ She was gone soon after that.”

Patty Reed



WAC mess hall at Two Rock Ranch.

lain recalled, “When we first started hearing the new code, we sent a priority message to Washington immediately; then the new code started being used consistently.” According to the WACs, they learned the new code better than the intended receivers. Katy Jones described what occurred, “When the Japanese started using the new code, the Japanese radio operators would often ask for a message to be resent. We’d sit at our stations, nod, and say ‘yes, that’s what I heard the first time.’”

All of the tasks were carried out with skill, patience, vigilance, and physical and mental labor of the most exhausting kind. One WAC said, “I dreamed in Morse, I even knitted in Morse.” But along with the pressure, long hours, and hard work, there were also light moments. One of the WACs adopted an orphaned lamb as a pet. She named the lamb Frenchy and kept her in the barracks. The other WACs tolerated their four-legged barracks mate, but made sure she was not around during inspections. Patty Reed recalled an encounter with Frenchy: “One day as I was walking toward the barracks, Frenchy came running down the hill and right between my legs, knocking me over, just as the captain and the lieutenant were approaching. I was on my back side, but I gave a salute and held it. The captain returned my salute, but not the lieutenant. I told her, ma’am, it’s military courtesy to return a salute and I’d like you to do it so I can get up off the ground!”

The radio operators had 3 days off between trick rotations, which they sorely needed to keep from going “dit crazy.” Soldiers stationed at Two

“I came on to my trick and started tuning to my assigned frequencies. I was copying Hiroshima, it was one of my stations, but I couldn’t find it. I’m saying to myself, ‘what the heck is the matter?’ I’m dialing all around, searching all over the place trying to pick it up, trying to locate the signal. There was nothing there.”

Lee Chamberlain

Rock Ranch quickly adopted Petaluma as their home away from home, and the townsfolk made sure they were, in turn, treated like family. The town set up a hospitality house for the soldiers to drop in anytime. The townspeople also held dances and invited soldiers to their homes for dinner. The WACs recalled that the people of Petaluma “could not have been nicer.” Romances blossomed among the men and women stationed at Two Rock, and a number of marriages took place, most of them long-lasting. By their own admission, the women were “past marriageable age—25.” Alethea (Lee) Chamberlain and her husband married after the war: “I had a lovely wedding. A family in town had a wedding reception for us and took us down to San Francisco to a hotel, which I thought was just a wonderful thing for them to do. They did that for a couple of girls.”

Hitch hiking was the primary means of transportation off the post. The WACs would thumb their way to San Francisco, where they joined throngs of people on the Golden Gate Bridge to watch returning ships. The atmosphere was festive. Bands played, balloons filled the air, and waiting family and friends cheered. At other times the WACs attended baseball games to root for Army teams playing against Navy. Each year they received a 30-day furlough and had the privilege of flying on military planes. Most, like Lee, enjoyed the adventure: “You’d find a plane and say, OK, where are you going? Whatever plane was going in your general direction that’s what you took. They weren’t the most comfortable, not luxurious, but it was fun. We

went all kinds of different places. My friend Priscilla talked her way into joining the crew of the Constellation. That was the first airplane that flew from Hamilton Air Force Base to Washington, DC in 8 hours. She could talk her way into anything.”

HEALTH AND WELFARE

But every silver lining has a cloud, and the intercept operators faced some special health and morale problems that weren’t mitigated by romance or furloughs. In addition to the WAC radio intercept operators, there were WAC cooks, motor pool personnel, mailroom clerks, and Women’s Army Corps officers and cadre. One of the chief morale problems was caused by housing in a single barracks women who had worked assignments on different shifts or who weren’t intercept operators. Rotating tricks made regular sleeping and eating habits impossible, and intercept operators were obliged to try to sleep at odd hours while barracks-mates engaged in normal activities.

Added to this was the severe nervous strain imposed by the necessity for intense concentration and the ever-present stricture of keeping security—of never being able to tell anyone, even their loved ones, what they were doing. Rheta Creighton explained, “Everything was so private that even our CO didn’t know what we did. We weren’t even supposed to talk to girls in the barracks. There were girls in the barracks who were not down in operations. They didn’t know what we did. We just couldn’t talk with anyone who wasn’t in our group—radio operators.”

Unfortunately, some of the WAC officers were ill-suited for assignment to SIGINT companies. Even if they were capable administrators, company officers on secret installations were often not cleared to visit the women on the job, so they didn’t understand the working conditions or the vital importance of ensuring off-duty rest and quiet. The cadre knew they could not enter certain buildings. The last WAC detachment commander, Kay Cross,



Officers doing KP at Two Rock Ranch Christmas dinner.

said she was never told what the girls in radio work were doing, other than it was “all secret.” Not until late 1945 was she first invited to see the “inner sanctum” of the radio intercept/intelligence building. One WAC advisor recommended that all future company officers be chosen from among operational officers who had themselves worked shifts and experienced “aching feet and backs and being unable to sleep in the daytime.”

SIGINT collection depended on the skill, character, and stamina of the signals intercept operators. The men and women of the 2d SSB performed their duties with outstanding ability and devotion, despite the strain of the long hours, swing shifts, and the ever-present necessity for rigid security measures. Colonel Corderman, the wartime commander of both SSA and 2d SSB, took great pride in the achievements of his WACs. When they were first assigned, he attempted to give them lighter and less arduous duties than the men, but the women demanded the right to share the same duties, including night-shift work. As Corderman put it, “We had no major problems with our WACs. The work was hard, but they performed well and never asked or wanted to be treated more considerately than the men.”

CHAPTER SIX

SIGINT SUCCESSES

OVERVIEW

In every theater of World War II, the fate of many a campaign hung on the secrecy—or lack thereof—with which information was transmitted. American victory owed, in part, to superb signals intelligence. As early as 1940, the Americans were reading high-grade Japanese diplomatic ciphers produced on the machine the Americans called PURPLE. In 1942 the US Navy broke Japanese naval ciphers, and in 1943 the US Army broke Japanese army ciphers. By early 1945 the Signal Security Agency was reading nearly every message sent by the Japanese, usually within hours of transmission.

Major General Chamberlain summed up the important role played by the cryptanalysts and intercept operators on his visit to Vint Hill Farms Station after the war:

“The information G-2 gave G-3 in the Pacific Theater alone saved us many thousands of lives and shortened the war by no less than two years.”

MG Stephen Chamberlain, Assistant chief of Staff, G-3, on General MacArthur's staff on the occasion of a visit to Arlington Hall.



General of the Army Dwight D. Eisenhower on a visit to Arlington Hall after the war. Accompanying him are LTG Hoyt S. Vandenberg; SSA chief, BG W. Preston Corderman; COL Frank B. Rowlett; and Mr. William F. Friedman.

Messages often were intercepted, decoded, translated, and placed in the hands of the Military Intelligence Service before their addressees might be presumed to have read them. A prominent example is Japan's message to the Swiss Minister of Foreign Affairs communicating Japan's intention to accept the surrender terms. The MIS knew the Japanese had accepted the Allied terms several hours before the Swiss Minister gave the message to the State Department.

PLAUDITS AND PARTINGS

The SIGINT produced by the Army, and its counterpart in the Navy, furnished some of the finest intelligence available in US history. Theater commanders were acutely interested in intelligence concerning Japanese troop and supply convoys and

the presence of Japanese fighters that could confront interdicting Allied forces. The bombing of the enemy convoy at Wewak exemplifies the results of intelligence gained through translating an intercepted communication: just a partial translation of

"I was in the decoding office when the message came suing for peace, but the Russians had to be included before acceptance. We all went to the front of the White House to hear the announcement that the war was over. A big celebration in the streets kept us up late. After the war I was sent to the Pentagon to file Nurem-bourg papers."

Frances Wolverton



WACs at Two Rock Ranch celebrate V-E Day.

a message revealed that a Japanese convoy was bringing supplies to the enemy garrison at Wewak. In turn, the American commander in the New Guinea area ordered the attack that sank three Japanese freight transports and set ablaze an escorting warship and a cargo ship.

Even seemingly innocuous weather reports provided valuable information because the Japanese broadcast the atmospheric conditions over Allied-held areas several hours in advance of a planned air raid; thus, the weather reports revealed enemy intentions. Conversely, Japanese local weather reports had a great deal to do with Allied planning, since reports intercepted by radio operators provided the weather conditions over targets.

General Albert Wedemeyer, Commanding General US Forces, China Theater, acknowledged SIGINT's contribution: "With the capitulation of Japan, it is a fitting time to recall that some of the top secret activities of the Signal Security Agency and the Military Intelligence Service, which have been of the greatest value in the war, have had to be conducted with such security restrictions that the extent of their contribution is not known at all to the

"It was like one big family. We 'girls' still have reunions. After the war I went to Japan and worked for the 8th Army for two years. A memorable experience."

Rita Berrian



Radio Intercept Operators reunited in August 1985 at Two Rock Ranch, then a Coast Guard facility. Front Row: Joyce Guenza, Lee Chamberlain, Rita Berrian, Barbara Templeman, Ada Applegate, host LTJG Kimberly J. Davis, Jane Roy, Millie Corbin, Priscilla Burton, Bobbie Dunn, Sophia Burnell, Mary Bromble. Second Row: Sybil Milstein, Evelyn Johnson, Maxine Stewart, Margie Carpentier, Kay Cross, Evelyn Smyers, LaVerne Warner. Back Row: Ruth Olimpio, Ruth Collins, Marion Sterne, Susie Jardin, Katy Jones, Anne Hart, Rheta Conner, Louise Canfield, Rosemary Clark, Polly Floerchinger.

public, and to only a small number in the Army. We also realize that the ingenuity, technical skill, judgment and patience of all those in the Military Intelligence Service and in the Signal Security Agency, who have been devoting themselves quietly to their duties throughout the past several years, have made possible such successful results. I should like them to know that a valuable contribution to the war effort has been made by their good work. We in the China Theater desire to commend you and your personnel, military and civilian, for unselfish devotion to duty and highly efficient work.”

SIGINT played a central role in the success of MacArthur’s island-hopping strategy. The WAC intercept operators followed each victory from their stations: “how wonderful it was when one island after another changed to international code and we knew it had been taken,” said one operator.

The remarkable and effective team of Arlington Hall, Vint Hill Farms, and Two Rock Ranch played a major role in producing the SIGINT that General Dwight Eisenhower, the Supreme Allied Commander, credited with making a “very decisive contribution to the Allied war effort.”

Chief of Staff General George C. Marshall called the work at Arlington Hall the determining factor in “the conduct of General Eisenhower’s campaign and of all operations in the Pacific.” Great credit is due to the thousands of civilian and military workers who labored at the tedious routines involved in signals intelligence and security operations. Their efforts were so valuable to the success of the D-Day invasion that General Eisenhower visited Arlington Hall after the war and asked to meet and personally thank the people who had produced the intelligence.

WACs undoubtedly contributed to the cryptanalytic successes that brought the war to a victorious end in 1945. Without the women working at Arlington Hall and at the intercept sites of the Second Signal Service Battalion, the SSA’s severe personnel shortage might not have been alleviated, hindering the massive intelligence production effort.

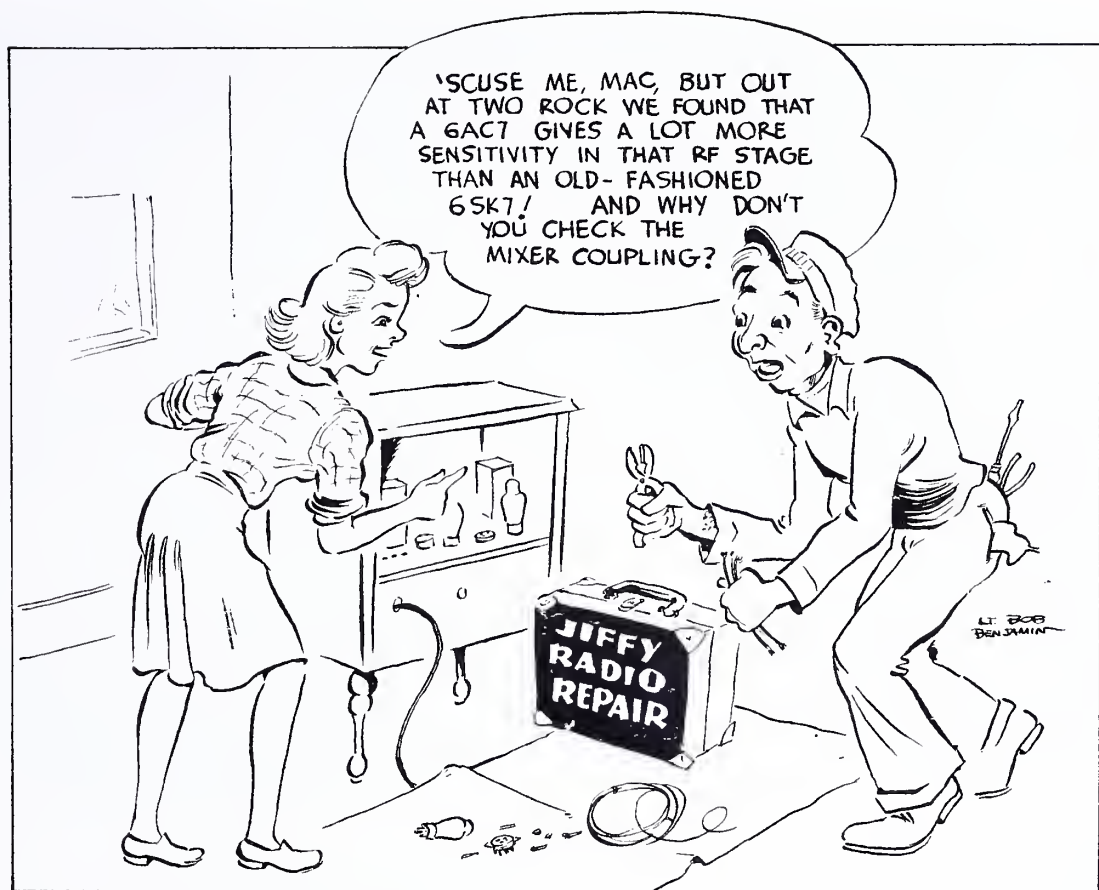
Most of the original WACs assigned to Vint Hill Farms or Two Rock Ranch served throughout the war, providing the raw data that revealed to analysts at Arlington Hall the intentions, preparations, and movements of enemy forces. The Army

“Even after some fifty-six years, many of my comrades in arms are still in touch. In fact, every two years we have been having a reunion in one of the big cities around the country. Our group is dwindling, but we still like to get together and hear how each of the girls are doing and it is wonderful to keep in touch. We were together for most of three years so have many memories to share with each other.

Alice Monson



WACs reassigned to overseas duty after the war enjoyed the opportunity to visit many European cities. A stay at the finest hotels cost only 50 cents a night. The WACs flew on no-frills 80 to 100 passenger, non-military charters. The pant suit was the uniform of choice for comfortable travel and sightseeing.



managed to recruit women perfect for the mission. The selection process ensured similar attributes—women who were absolutely trustworthy, mentally quick, tireless, and discreet. To a woman they did an outstanding job; to a woman they kept their oath, not one of them ever revealing the SIGINT role or her part in the war. As a result, their contribution to the Allied victory has not received the recognition that usually accompanies an exceptional accomplishment. However, these former WACs do not consider their efforts extraordinary, and instead give the credit to the soldiers who fought on the battlefield.

“We all did our jobs faithfully, without any thought of how very vital our work was in winning the war. It only hit home when President Truman sent each of us a letter of commendation for helping to end the war sooner and saving thousands of lives.”

Sophia Risko

It’s no wonder that these like-minded women, pioneers in their own right, formed a life-long bond. They assemble regularly to honor the memories of their comrades and to share the experience of having served in an arm of the military that did so much to end the war.

Reflecting on the joyous victory, Mary Bissinger recalled, “After parading in Petaluma on VE Day, we were all looking forward to what became known as VJ Day and another parade celebration. With the swift return of husbands and fiancées from overseas, we were ready to become civilians again.” Another WAC intercept operator

“When the war was over, so was our job. I was sent to Warrenton, VA, where we discharged people. One day it was my brother!”

Louise Eugley

spoke for all: "We were made to feel, once the war had ended, that we had done a good and important job. I know we had made wonderful friends. The group I was with numbered 100 and we have had reunions ever since 1946. It was not an easy job intercepting the Japanese code for the three years we were there, but when it was finally released to the public, it sort of made one proud of having served this country."

While most of the women returned to civilian life at the end of the war, some were reassigned with US occupational forces overseas. But for the majority, the return to civilian life came quickly. By the end of September, the WAC barracks at Arlington Hall Station had been converted to storage rooms. A month after VJ Day, the WAC detachments at Two Rock and Vint Hill were disbanded. Emotional farewells were said. Sophia Risko described leaving Two Rock: "Working so closely in this small camp united us as a family. It was very traumatic when we had to disperse and each go our own way."

Beyond their vital contribution to victory, the faithful performance of the WACs opened the door to permanent inclusion of women into the US military forces. Although the law had required complete demobilization of the women within 6 months after the end of the war, there was enough high-

level support in 1946 and 1947 for the Eightieth Congress to pass the Women's Armed Services Integration Act of 1948. The Act was to establish a permanent place for women in the Army, Navy, Air Force, and Marine Corps.

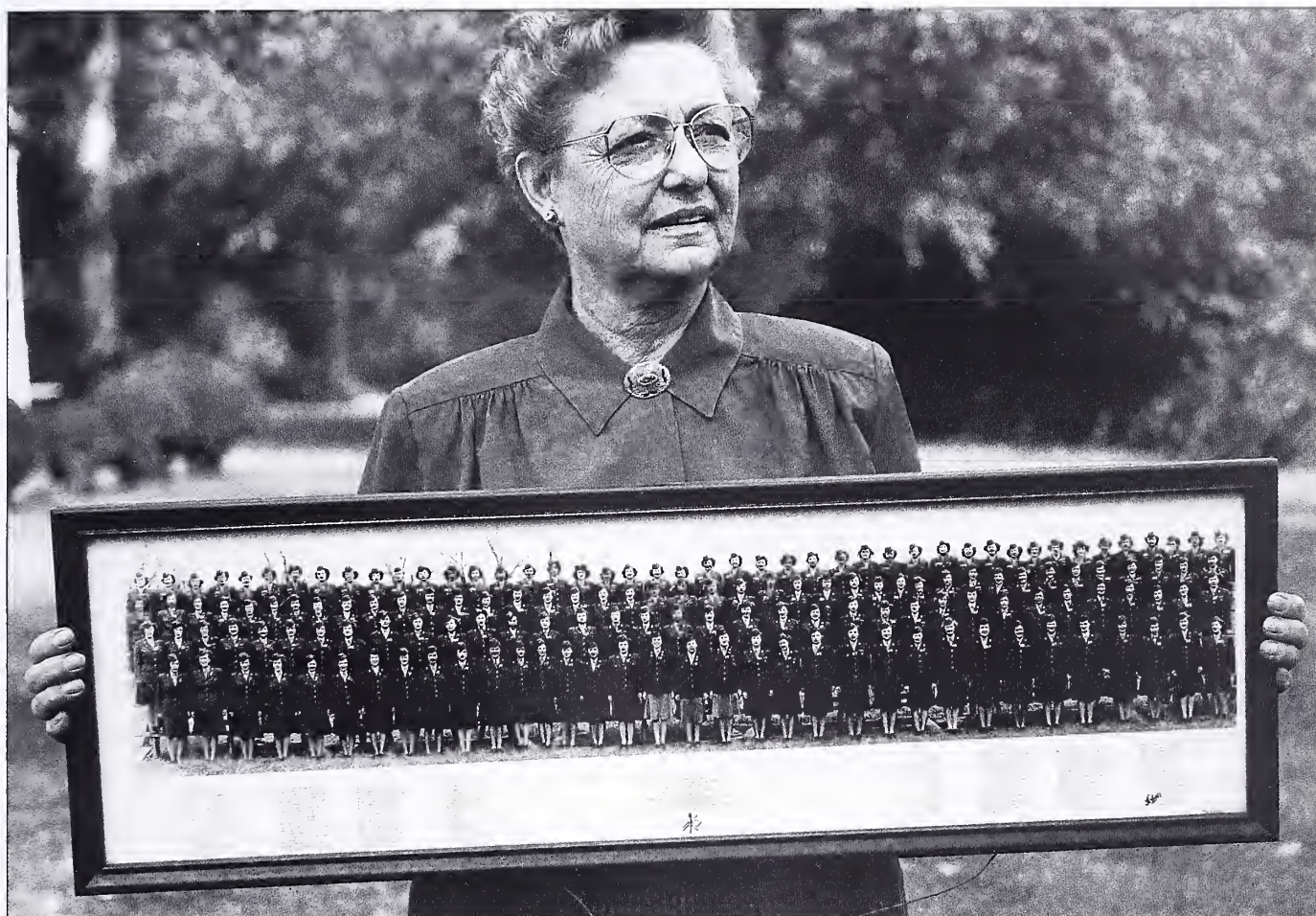
LEGACY

A board that convened at Fort Monmouth in late 1947 to consider the employment of the WAC in communications activities stated, "it has become an accepted conclusion that women were more adaptable and dexterous than men in the performance of certain technical specialties." It wasn't until 1971, however, that the SSA's post-war successor, the Army Security Agency, was granted the authority to enlist women. Privates Dorothy Coomes and Sherry McDaniels were the first WAC soldiers admitted to the Morse Code course at the USASA Training Center & School. Following in the footsteps of their WW II predecessors, the women were assigned to Vint Hill Farms Station.

The WACs will be remembered for their esprit de corps and selfless service. They were part of a great effort that established a tradition of loyalty, dedication, and excellence. The highly professional and skillful manner in which they carried out their duty set the standard for today's intelligence professional.

"The work as a Japanese Intercept Radio Operator was fascinating, but it was of a highly secret nature so could not be talked about. My company was awarded a meritorious medal for the exemplary work we performed and we were proud of that. The day of my discharge finally came January 6, 1946 after 34 months in the service, and I was never sorry for the experience. Even after some fifty-six years many of my comrades in arms are still in touch."

Alice Monson



The Warrenton, Virginia, Antiquarian Society preserves Weston and memorabilia, such as this photo of the WAC detachment to Vint Hill.

BACK AT THE RANCH

Come ye back to Petaluma,
Come ye back to Two Rock Ranch,
Come and see the old gang gathered
From the Second Signal Branch.

Walk about the grounds we wandered
When the Signal Corps was here,
Picture all the sheep out grazing
In the fields of yesteryear.

Look around at all the changes.
Gone the windmill on the hill,
The WAC barracks, day room, mess hall,
Other things their places fill.

Back before we had our mess hall
Long chow lines meant waits (and griefs)
But we patiently awaited
Food on trays served up by "Chief."

Pay Call in the Post Theater
Was the greatest thrill we had.
It took not much time to spend it,
Making local merchants glad!

Take the bus to San Francisco,
Stop off at the USO,
See a show or buy some presents,
Tour the Old Presidio.
(Chinatown was fun to walk in,
Fishers' Wharf a place to go.)

Lake Tahoe or Sacramento,
Russian River on a pass,
Day shifts, night shifts, swing shifts, K.P.,
Were the lot for every lass.

Little parties, special outings,
Now and then a fun-time dance
Where the girls from town would join us,
Many times a real romance.

Wedding bells were ringing often,
Lifetime love was strong and true.
Thirty, forty years of marriage!
We can all be proud of you.
(Yes, our Two Rock bunch was special,
Through the War, and after, too.)

Come ye back to Petaluma,
Greet the old Two Rockers here,
Friendly faces all around us,
Good times, tough times, we shared here.
Many bonds of trust and friendship
Still survive, year after year.

The winds of time have changed the Ranch,
Old sights and sounds have blown away
Where once the Second Signal Branch
Did far more work than it did play.

You had to put your country first,
To "Win the War" was not a game.
How many times the strikes were cursed,
And union bosses were to blame.

Essential goods for overseas
Were bound up by the picket line
While many squadron sent back pleas
To ship those goods while there was time.

On short-wave news we heard the tale,
Spare parts were needed for the war.
Planes could not fly, ships could not sail
Until the unions won their score.

And then, there were the football games,
The West Point team was flying high;
How well we knew the heroes' names
And cheered Old Army to the sky.

We cried, we cheered to hear the Yanks
Were driving through a free "Paree"
And offered up our prayers of thanks
To watch the spread of liberty.

Our Hallicrafter sets were tuned
To pick up signals barely found;
The QRA and QRM
And sunspots blocked out many a sound.

The Eastern struggle took such tolls
Of life and limb and mind and might.
On far-flung coral reef atolls
Our young men fought in desperate plight.

Could we call back The Bomb, the strife
Much longer, crueller, would have been.
With even greater loss of life,
And yet, it cost a lot to win.

Now, to the Ranch a few return
With graying hair and a slower pace.
From back seats here we see, we learn,
Why World War III did not take place.

*Margie Carpentier
TRR Reunion, August, 1985*



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SILENCE MEANS SECURITY

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